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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,572	07/13/2007	Daniel Frederick Hould	839_199 WO	2375

25191 7590 12/01/2011

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EXAMINER	
WU, VICKI H	
ART UNIT	**PAPER NUMBER**
1745	
MAIL DATE	**DELIVERY MODE**
12/01/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,572	HOULD ET AL.	
	Examiner	Art Unit	
	VICKI WU	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-37* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-37* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *23 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a non-final Office action in response to the RCE comprising the applicant's remarks and claim amendments submitted on 12/20/2010.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-25

Claims 1-4, 6, 12, 13, 15-19, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,356,496 (Lincoln) in view of JP 2003-072994 A (Toyomura).

Regarding claims 1 and 17, Lincoln teaches a web splicer (col. 1 lines 7-12), comprising:

a first roll supporter for supporting a first core having a first roll positioned thereon, said first roll comprising a first web wound around said first core (12, Figure 14; col. 3 lines 42-46);

a second roll supporter for supporting a second core having a second roll positioned thereon, said second roll comprising a second web wound around said second core (15, Figure 14; col. 3 lines 46-51);

a paster roll, said paster roll being rotatable about a paster roll axis, said paster roll being mounted on a carriage (by definition, a machine part that drives something else), said paster roll being moveable relative to said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4);

a pressing device (means for applying pressure) which selectively causes force to be applied to said paster roll relative to said carriage (inherent actuation mechanism in 92, Figure 14; col. 6 line 68; col. 7 lines 1-4).

Lincoln does not expressly disclose said paster roll axis being movable relative to said carriage.

Lincoln further does not expressly disclose a carriage driving device, said carriage driving device causing said carriage to move from a first carriage position to a second

carriage position after an engage signal is fed to said carriage driving device, whereby said paster roll abuts said second roll when said carriage is in said second carriage position in this particular embodiment.

Toyomura teaches a conventional paper splicing device, said device comprising a paster roll (11, Drawing 5), said paster roll being rotatable about a paster roll axis, said paster roll being mounted on a carriage 19 (by definition, a machine part that drives something else) (Drawing 5), said paster roll axis being moveable relative to said carriage (via arms 9a, 9b, 17, see Drawing 5) (Detailed Description: paragraph 0007).

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate said configuration comprising the arms and carriage assembly of Toyomura in order to modify and / or replace the carriage in Lincoln so that the resulting carriage of Lincoln comprises arms to make the paster roll axis of Lincoln movable to said carriage.

The configuration of Toyomura comprising the paster roll carriage is well known and practiced in the conventional paper-splicing art (Detailed Description: paragraph 0007). Further rationale to combine would have been the motivation provided by the advantages to incorporating said specific configuration of Toyomura; that in incorporating said configuration, the carriage comprising the arms would provide reliable means in terms of flexibly and feasibly transporting the paster roll wherever desired in relation to the splicer (Tomoyura: Detailed Description: paragraph 0007).

Further, in an alternative embodiment, Lincoln teaches a carriage driving device (60, Figure 17; col. 8 lines 1-4), said carriage driving device causing said carriage (92, Figures 14, 17 and 18; col. 6 line 68; col. 7 lines 1-4; col. 8 lines 1-4) to move from a first carriage position to a second carriage position after an engage signal is fed to said carriage driving device (col. 8 lines 1-4), whereby a paster roll (50, Figures 17 and 18; col. 8 lines 1-4) abuts said second roll (15, Figures 14 and 18; col. 3 lines 46-51) when said carriage is in said second carriage position (50, Figure 18; col. 8 lines 5-11).

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate specific carriage driving device configurations of the alternative embodiment of Lincoln in order to drive the carriage of Lincoln in view of Toyomura, so that the paster roll of Lincoln in view of Toyomura would then abut the second roll when said carriage is in said second carriage position, as described above in the configuration of said alternate embodiment. The rationale to do so would have been the motivation provided by the advantages to using said specific configurations of said embodiment; that in using said specific configurations, the precise moment at which the paster roll should be positioned to paste against the second roll may be more optimally honed (col. 7 lines 53-56).

Regarding claims 2 and 18, Lincoln teaches that the paster roll is rotatably mounted on a paster roll bracket (by definition, a projecting structural support) (see linear support

extending from 90 to top of 92, Figure 16), said paster roll bracket being pivotally mounted on said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4).

Regarding claims 3 and 19, Lincoln teaches that said pressing device has a first connecting element and a second connecting element, said first connecting element being connected to said carriage, said second connecting element being connected to said paster roll bracket (see linear support extending from 90 to top of 92, Figure 16), whereby force exerted by said pressing device applies force to said paster roll relative to said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4).

Regarding claim 4, Lincoln teaches that said pressing device is a hydraulic cylinder device which, when actuated, applies force to said paster roll away from said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4).

Regarding claims 6 and 21, Lincoln teaches that said carriage driving device comprises a servo motor (15a, Figure 17; col. 7 lines 62-65).

Regarding claim 12, Lincoln teaches a detector which detects occurrences of a splice region on said second roll passing a detection location (36, Figure 14; col. 7 lines 9-31).

Regarding claim 13, Lincoln teaches that said detector comprises a photo detect eye (36, Figure 14; col. 7 lines 9-31).

Regarding claim 15, Lincoln teaches a web cutter which, when actuated, cuts said first web (100 and 102, Figure 14; col. 7 lines 4-8).

Regarding claim 16, Lincoln teaches that said web splicer comprises timing means for causing said engage signal to be fed at a time whereby said engage signal actuates said carriage driving device and brings said paster roll into contact with said second roll at a contact location when said splice region is between one-quarter and three-quarters of a revolution of said second roll from said contact location (col. 7 lines 62-68; col. 8 lines 1-21).

Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,356,496 (Lincoln) in view of JP 2003-072994 A (Toyomura), and in further view of US Patent 6,096,150 (Ohno).

Regarding claims 5 and 20, the teachings of the limitations of Lincoln in view of Toyomura are detailed above in the rejection of claims 1 and 17 under 35 U.S.C. 103(a). Lincoln in view of Toyomura does not expressly disclose that said carriage will move from said second carriage position to said first carriage position after a disengage signal is fed to the carriage driving device, said paster roll not abutting said second roll when said carriage is in first said carriage position.

Ohno teaches a paper-web splicing system (col. 1 lines 5-14) comprising a carriage (90, Figure 2; col. 7 lines 24-26) comprising a bracket (91, Figure 2; col. 7 lines 24-37) that moves from a second carriage position to a first carriage position after a disengage signal is fed to the carriage driving device, pasting/splicing of the paper web is halted and thus the paster roll (201, Figure 2; col. 6 lines 19-20) is not abutting a second roll (R, Figure 2; col. 6 lines 7-14) when said carriage is in first said carriage position (col. 6 lines 25-57; col. 7 lines 40-52).

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate the specific carriage features of Ohno in order to modify and / or replace the carriage of Lincoln in view of Toyomura. The rationale to do so would have been the motivation provided by the advantages to incorporating said specific features; that in incorporating said specific features, the speed and rotation of the paper may be more properly controlled, thereby reducing the amount of paper breakage from the web-splicing process (Ohno: col. 3 lines 11-41).

Claims 7, 8, 9, 10, 11, 22, 23, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,356,496 (Lincoln) in view of JP 2003-072994 A (Toyomura), and in further view of US Patent 6,050,517 (Dobrescu).

Regarding claims 7, 8, 9, 10, 11, 22, 23, 24, and 25, the teachings of the limitations of Lincoln in view of Toyomura are detailed above in the rejection of claims 1 and 17 under

35 U.S.C. 103(a). Lincoln in view of Toyomura does not expressly disclose that said carriage driving device comprises a gearshaft rotatable in clockwise and counter-clockwise directions, or at least one gear integral with or connected to said gearshaft, and at least one rack integral with or connected to said carriage, said gear having gear teeth, said rack having rack teeth, said gear teeth engaging said rack teeth,

whereby rotation of said gearshaft in said clockwise direction causes said carriage to move in a first direction, and rotation of said gearshaft in said counter-clockwise direction causes said carriage to move in a second direction, said second direction being opposite said first direction.

Lincoln in view of Toyomura does not expressly disclose that said carriage driving device further comprises a servo motor which selectively drives said gearshaft rotationally in said clockwise direction or said counter-clockwise direction, or that said carriage driving device comprises at least one cam and at least one cam-contacting surface, wherein said cam contacts said cam-contacting surface.

Lincoln in view of Toyomura does not expressly disclose that said carriage driving device comprises a servo motor which selectively drives said cam rotationally in a clockwise direction or a counter-clockwise direction, whereby rotation of said cam in said direction in said clockwise direction causes said carriage to move in a first direction, and rotation of said cam in said counter-clockwise direction causes said carriage to move in a second direction, said direction being opposite said first direction.

Lincoln in view of Toyomura further does not expressly disclose that said carriage driving device further comprises a servo motor which selectively drives said cam rotationally, whereby rotation of said cam over a first portion of a complete rotation causes said carriage to move in a first direction, and rotation of said cam over a second portion of said complete rotation causes said carriage to move in a second direction, said second direction being opposite said first direction.

Dobrescu teaches a web-accumulator apparatus comprising carriages (312, 314, Figure 14; col. 7 lines 10-14) and gears rotatable in clockwise and counter-clockwise directions (336, 337, Figure 14; col. 6 line 67; col. 7 lines 1-4), at least one rack integral with or connected to carriage (338, 339, 312, 314, Figure 14; col. 7 lines 6-10), the gear having gear teeth (336 and 337, Figure 14; col. 7 lines 6-10), said rack having rack teeth (338 and 339, Figure 14; col. 7 lines 6-10), said gear teeth engaging said rack teeth (336 and 337, Figure 14; col. 7 lines 6-10);

whereby rotation of said gearshaft in said clockwise direction causes said carriage to move in a first direction, and rotation of said gearshaft in said counter-clockwise direction causes said carriage to move in a second direction, said second direction being opposite said first direction (col. 7 lines 1-14).

Dobrescu teaches that said carriage driving device further comprises a servo motor which selectively drives said gears rotationally in said clockwise direction or said counter-clockwise direction (32, Figure 14; col. 6 line 67; col. 7 lines 1-4).

Dobrescu teaches that said carriage driving device comprises at least one cam (340, Figure 14; col. 7 lines 16-19) and said carriage comprises at least one cam-contacting surface (col. 7 lines 16-19), and wherein said cam contacts said cam-contacting surface (340, Figure 14; col. 7 lines 16-19).

Dobrescu teaches that said carriage driving device comprises a servo motor which selectively drives said cam rotationally in a clockwise direction or a counter-clockwise direction (col. 6 line 67; col. 7 lines 1-19),

whereby rotation of said cam in said direction in said clockwise direction causes said carriage to move in a first direction, and rotation of said cam in said counter-clockwise direction causes said carriage to move in a second direction, said direction being opposite said first direction (col. 6 line 67; col. 7 lines 1-4, 6-19).

Dobrescu teaches that said carriage driving device further comprises a servo motor which selectively drives said cam rotationally (32, 340, Figure 14; col. 6 line 67; col. 7 lines 1-4),

whereby rotation of said cam over a first portion of a complete rotation causes said carriage to move in a first direction, and rotation of said cam over a second portion

of said complete rotation causes said carriage to move in a second direction, said second direction being opposite said first direction (col. 6 line 67; col. 7 lines 1-4, 6-19).

Dobrescu does not expressly disclose using a gearshaft to engage said gears. It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate a gearshaft in order to modify the apparatus of Dobrescu. It is very conventionally known in the art to integrate gearshafts with gears to allow said gears to rotate.

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate the specific carriage driving configurations of Dobrescu in order to modify and / or replace the carriage driving device of Lincoln in view of Toyomura. The rationale to do so would have been the motivation provided by the advantages to using said specific configurations of Dobrescu; that using said specific configurations provides enhanced control over the movement of the carriages, which may minimize unwanted friction and inertia in the overall apparatus (Dobrescu: col. 1 lines 56-67; col. 2 lines 1-2; col. 7 lines 10-14).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,356,496 (Lincoln) in view of JP 2003-072994 A (Toyomura), and in further view of US Patent 4,543,152 (Nozaka).

Regarding claim 14, the teachings of the limitations of Lincoln in view of Toyomura are detailed above in the rejection of claim 12 under 35 U.S.C. 103(a). Lincoln in view of Toyomura does not expressly disclose a pulse generator and a pulse counter.

Nozaka teaches a web-splicing apparatus (col. 1 lines 7-13) comprising a pulse generator and a pulse counter (111 and 117, Figure 13; col. 14 lines 58-68; col. 15 lines 1-3).

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate the pulse generator and counter of Nozaka in order to modify the apparatus of Lincoln in view of Toyomura. The rationale to do so would have been the motivation provided by the advantages to using said specific equipment of Nozaka; that using said specific equipment provides an improved method of positively and accurately splicing web rolls, properly aligning successive web rolls, and continuously feeding the web insto a desired web processing machine by overcoming weaknesses of and deriving strength from a known zero speed scheme method and a speed matching scheme method (Nozaka: col. 3 lines 51-60; 65-68).

Claims 26-37

Claims 26-31, 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,356,496 (Lincoln) in view of JP 2003-072994 A (Toyomura).

Regarding claim 26, Lincoln teaches a method of splicing a second web to a first web, comprising:

unwinding a first web from a first roll (11 and 12, Figure 14; col. 3 lines 42-46);

rotating a second roll, said second roll comprising a second web wound around a second core, said second web having a splice region on an external portion of said second roll (20 and 15, Figure 14; col. 3 lines 46-51);

actuating a pressing device to cause force to be applied to a paster roll relative to a carriage (by definition, a machine part that drives something else), said paster roll being mounted on said carriage, said paster roll being movable relative to said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4); and

moving said carriage from a first carriage position to a second carriage position, whereby a portion of said first web is sandwiched between said paster roll and said second roll at a contact location (11 and 20, Figures 14 and 15; col. 6 line 68; col. 7 lines 1-4);

whereby a force applied to said first web between said paster roll and said second roll is controlled by a force applied by said pressing device (col. 7 lines 1-4);

whereby when said splice region passes through said contact location, said second web becomes attached to said first web along said splice region (11 and 20, Figure 15; col. 7 lines 1-4).

Lincoln does not expressly disclose said paster roll having an axis that is movable relative to said carriage.

Lincoln does not expressly disclose moving said carriage from a first carriage position to a second carriage position *upon receiving an engage signal*. However, in an alternative embodiment, Lincoln teaches a carriage driving device (60, Figure 17; col. 8 lines 1-4), said carriage driving device causing said carriage (92, Figures 14, 17 and 18; col. 6 line 68; col. 7 lines 1-4; col. 8 lines 1-4) to move from a first carriage position to a second carriage position after an engage signal is fed to said carriage driving device (col. 8 lines 1-4), whereby a paster roll (50, Figures 17 and 18; col. 8 lines 1-4) abuts said second roll (15, Figures 14 and 18; col. 3 lines 46-51) when said carriage is in said second carriage position (50, Figure 18; col. 8 lines 5-11).

Toyomura teaches a conventional paper splicing device, said device comprising a paster roll (11, Drawing 5), said paster roll being rotatable about a paster roll axis, said paster roll being mounted on a carriage 19 (by definition, a machine part that drives something else) (Drawing 5), said paster roll axis being moveable relative to said carriage (via arms 9a, 9b, 17, see Drawing 5) (Detailed Description: paragraph 0007).

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate said configuration comprising the arms and carriage assembly of Toyomura in order to modify and / or replace the carriage in Lincoln so that the resulting carriage of Lincoln comprises arms to make the paster roll axis of Lincoln movable to said carriage.

The configuration of Toyomura comprising the paster roll carriage is well known and practiced in the conventional paper-splicing art (Detailed Description: paragraph 0007). Further rationale to combine would have been the motivation provided by the advantages to incorporating said specific configuration of Toyomura; that in incorporating said configuration, the carriage comprising the arms would provide reliable means in terms of flexibly and feasibly transporting the paster roll wherever desired in relation to the splicer (Tomoyura: Detailed Description: paragraph 0007).

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate the specific carriage driving device configurations of the alternative embodiment in order to drive the carriage of Lincoln in view of Toyomura, so that the paster roll of Lincoln in view of Toyomura would then abut the second roll when said carriage is in said second carriage position, as described above in the configuration of said alternate embodiment. The rationale to do so would have been the motivation provided by the advantages to using said specific configurations of said embodiment; that in using said specific configurations, the precise moment at which the paster roll should be positioned to paste against the second roll may be more optimally honed (col. 7 lines 53-56).

Regarding claim 27, Lincoln teaches that the paster roll is rotatably mounted on a paster roll bracket (by definition, a projecting structural support) (see linear support extending

from 90 to top of 92, Figure 16), said paster roll bracket being pivotally mounted on said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4).

Regarding claim 28, Lincoln teaches that said pressing device has a first connecting element and a second connecting element, said first connecting element being connected to said carriage, said second connecting element being connected to said paster roll bracket (see linear support extending from 90 to top of 92, Figure 16), whereby force exerted by said pressing device applies force to said paster roll relative to said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4).

Regarding claim 29, Lincoln teaches that said pressing device is a hydraulic cylinder device which, when actuated, applies force to said paster roll away from said carriage (90 and 92, Figure 14; col. 6 line 68; col. 7 lines 1-4).

Regarding claim 30, Lincoln teaches moving said carriage from said second carriage position to said first carriage position, whereby said paster roll is moved out of abutment with said second roll (90 and 15, Figure 14; see placement of rolls).

Regarding claim 31, Lincoln teaches that said carriage driving device comprises a servo motor (15a, Figure 17; col. 7 lines 62-65).

Regarding claim 36, Lincoln teaches detecting occurrences of a splice region on said second roll passing a detection location (36, Figure 14; col. 7 lines 9-31), and feeding said engage signal to said carriage driving device at a time whereby said carriage driving device brings said paster roll into contact with said second roll at a contact location when said splice region is between one-quarter and three-quarters of a revolution of said second roll from said contact location (col. 7 lines 62-68; col. 8 lines 1-21).

Regarding claim 37, Lincoln teaches moving a web cutter from a first web cutter position to a second web cutter position, said web cutter cutting said first web when said web cutter reaches said second web cutter position (100 and 102, Figure 14; col. 7 lines 4-8).

Claims 32, 33, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,356,496 (Lincoln) in view of JP 2003-072994 A (Toyomura), and in further view of US Patent 6,050,517 (Dobrescu).

Regarding claims 32, 33, 34, and 35, the teachings of the limitations of Lincoln in view of Toyomura are detailed above in the rejection of claim 26 under 35 U.S.C. 103(a). Lincoln in view of Toyomura does not expressly disclose that said carriage driving device causes at least one gearshaft to rotate when said carriage driving device is

activated in response to said engage signal, said gear having gear teeth which engage a rack which is integral with or connected to said carriage,

said rotation of said gearshaft in a first direction causing said carriage to move from said first carriage position to said second carriage position as a result of said engagement of said gear teeth to said rack, said rotation of said gearshaft in a second direction causing said carriage to move from said second carriage position to said first carriage position.

Lincoln in view of Toyomura further does not expressly disclose that said carriage driving device comprises a servo motor which selectively drives said gearshaft rotationally in a clockwise direction or a counter-clockwise direction, or that said carriage driving device causes at least one cam to rotate when said carriage driving device is activated in response to said engage signal, said cam contacting a cam-contacting surface on said carriage, said rotation of said cam in a clockwise direction causing said carriage to move in a first direction, and rotation of said cam in a counter-clockwise direction causing said carriage to move in a second direction, said second direction being opposite said first direction.

Lincoln in view of Toyomura does not expressly disclose that said carriage driving device causes at least one cam to rotate when said carriage driving device is activated in response to said engage signal, said cam contacting a cam-contacting surface on said carriage, rotation of said cam over a first portion of a complete rotation causing

said carriage to move in a first direction, and rotation of said cam over a second portion of said complete rotation causing said carriage to move in a second direction, said second direction being opposite said first direction.

Dobrescu teaches a web-accumulator apparatus comprising carriages (312, 314, Figure 14; col. 7 lines 10-14) and a carriage driving device that causes at least one gearshaft to rotate when said carriage driving device is activated in response to an engage signal from a potentiometer (350, Figure 1; col. 7 lines 19-25), said gear having gear teeth which engage a rack which is integral with or connected to said carriage (336, 337, 338, 339, 312, 314, Figure 14; col. 7 lines 6-10),

said rotation of said gearshaft in a first direction causing said carriage to move from a first carriage position to a second carriage position as a result of said engagement of said gear teeth to said rack, said rotation of said gearshaft in a second direction causing said carriage to move from said second carriage position to said first carriage position (col. 7 lines 1-14).

Dobrescu teaches that said carriage driving device further comprises a servo motor which selectively drives said gears rotationally in a clockwise direction or a counter-clockwise direction (32, Figure 14; col. 6 line 67; col. 7 lines 1-4).

Dobrescu teaches that said carriage driving device causes at least one cam (340, Figure 14; col. 7 lines 16-19) to rotate when said carriage driving device is activated in

response to said engage signal (350, Figure 1; col. 7 lines 16-25), said cam contacting a cam-contacting surface on said carriage (col. 7 lines 16-19), said rotation of said cam in a clockwise direction causing said carriage to move in a first direction, and rotation of said cam in a counter-clockwise direction causing said carriage to move in a second direction, said second direction being opposite said first direction (312, 314, 340, Figure 14; col. 7 lines 1-14; 16-19).

Dobrescu teaches that said carriage driving device causes at least one cam (340, Figure 14; col. 7 lines 16-19) to rotate when said carriage driving device is activated in response to said engage signal (350, Figure 1; col. 7 lines 16-25), said cam contacting a cam-contacting surface on said carriage (col. 7 lines 16-19), rotation of said cam over a first portion of a complete rotation causing said carriage to move in a first direction, and rotation of said cam over a second portion of said complete rotation causing said carriage to move in a second direction, said second direction being opposite said first direction (312, 314, 340, Figure 14; col. 7 lines 1-14; 16-19).

Dobrescu does not expressly disclose using a gearshaft to engage said gears. It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate a gearshaft in order to modify the apparatus of Dobrescu. It is very conventionally known in the art to integrate gearshafts with gears to allow said gears to rotate.

It would have been obvious to one ordinarily skilled in the art at the time the invention was made to incorporate the specific carriage driving configurations of Dobrescu in order to modify and / or replace the carriage driving device of Lincoln in view of Toyomura. The rationale to do so would have been the motivation provided by the advantages to using said specific configurations of Dobrescu; that using said specific configurations provides enhanced control over the movement of the carriages, which may minimize unwanted friction and inertia in the overall apparatus (Dobrescu: col. 1 lines 56-67; col. 2 lines 1-2; col. 7 lines 10-14).

Response to Arguments

Examiner thanks Applicant for their response.

Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICKI WU whose telephone number is (571)270-7666. The examiner can normally be reached on M-F (8:30 am-6:30 pm), every other Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker can be reached on 571-272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8666.

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/V.W./
Patent Examiner, TC 1745

/Philip C Tucker/

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